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PTO/SB/08a (08-03)

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Substitute for form 1449A/PTO

**SUPPLEMENTAL INFORMATION  
DISCLOSURE STATEMENT BY  
APPLICANT**

(Use as many sheets as necessary)

Sheet

1

of

1

Application Number

10/792,323

Filing Date

March 3, 2004

First Named Inventor

Lawrence C. Lei

Group Art Unit

1734

Examiner Name

Sharon Latimer

Attorney Docket Number

AMAT/5191.C1/ISM/CORE/MCVD/PJS

Submission Date

December 30, 2004

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
SL	A1	US-20020009544	01/24/2002	McFeely, et al.	1-15 + - M
	A2				
	A3				
	A4				
	A5				
	A6				
	A7				
	A8				
	A9				
	A10				
	A11				

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
SL	B1	EP 1 079 001	02/28/2001	Morton International, Inc.		
SL	B2	GB 2 151 662	10/29/1984	N.V. Phillips' Gloeilampenfabrieken		
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	B5					

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
SL	C1	International Search Report from International Application No. PCT/US03/22186 (AMAT/6798-PC)	

Examiner

S. P.

Date Considered

6/20/05

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Substitute for form 1449A/PTO JUN 14 2004 <b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)		Application Number	10/792,323
		Filing Date	March 3, 2004
		First Named Inventor	Lawrence C. Lei
		Group Art Unit	Unknown
		Examiner Name	Unknown
		Attorney Docket Number	AMAT/5191.C1/ISM/CORE/MCVD/PJS
Sheet	1	of	11
		Submission Date	June 8, 2004

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		
		Number-Kind Code <sup>2</sup> (if known)					
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	A2	US-20040014320 A1	01/22/2004	CHEN, ET AL.			
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SL	B1	EP 1 167 569 A1	06/05/2001	IPS LIMITED		
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Examiner

S. P.

Date Considered

6/2/05

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				First Named Inventor		Lawrence C. Lei	
				Group Art Unit		Unknown	
				Examiner Name		Unknown	
				Attorney Docket Number		AMAT/5191.C1/ISM/CORE/MCVD/PJS	
Sheet	2	of	11	Submission Date		June 8, 2004	

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		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
SP	B6	JP 05-206036	08/13/1993	RIKAGAKU KENKYUSHO		
SP	B7	JP 05-234899	09/10/1993	HITACHI LTD		
SP	B8	JP 05-270997	10/19/1993	FUJITSU LTD		
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SP	B10	JP 06-317520	11/15/1994	HITACHI METALS LTD		

Examiner <u>S. P.</u>	Date Considered <u>8/20/05</u>
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(Use as many sheets as necessary)

Sheet

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of

11

Application Number

10/792,323

Filing Date

March 3, 2004

First Named Inventor

Lawrence C. Lei

Group Art Unit

Unknown

Examiner Name

Unknown

Attorney Docket Number

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		Number-Kind Code <sup>2</sup> (if known)					
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SP	B11	JP 2000122725	04/28/2000	CKD CORP; TOSHIBA CORP		
JP	B12	JP 2000212752	11/12/2002	SAMSUNG ELECTRONICS CO LTD		
SP	B13	JP 2000319772 (Abstract Only)	03/28/2000	P K LTD		
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SP	B15	JP 2001111000	12/26/2002			

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Lawrence C. Lei

Group Art Unit

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	B18	WO 00/16377	03/23/2000	GENITECH CO., LTD.		
	B19	WO 00/54320	09/14/2000	GENUS, INC.		
	B20	WO 00/79575 A1	12/28/2000	GENITECH, INC.		

Examiner

J. D.

Date Considered

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	A74	US-20010054377 A1	12/27/2001	LINDFORS, ET AL.				
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	A84	US-20010009695	07/26/2001	SAANILA, ET AL.				
	A85	US-20010009140 A1	07/26/2001	BONDESTAM, ET AL.				
	A86	US-20010002280	05/31/2001	SNEH				
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	A89	US-6630030 B1	10/07/2003	SUNTOLA, ET AL.				
HP	A90	US-6579372 B2	06/17/2003	PARK				

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Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
SP	B21	WO 0079576 A1	12/28/2000	GENITECH, INC.		
SP	B22	WO 01/15220 A1	03/01/2001	ASM AMERICA, INC.		
SP	B23	WO 01/17692 A1	03/15/2001	ASM AMERICA, INC.		
SP	B24	WO 01/27346 A1	04/19/2001	ASM MICROCHEMISTRY OY		
SP	B25	WO 01/27347 A1	04/19/2001	ASM MICROCHEMISTRY OY		

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LR

Date Considered

6/8/04

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**SUPPLEMENTAL INFORMATION  
DISCLOSURE STATEMENT BY  
APPLICANT**

(Use as many sheets as necessary)

Sheet

6

of

11

Application Number

10/792,323

Filing Date

March 3, 2004

First Named Inventor

Lawrence C. Lei

Group Art Unit

Unknown

Examiner Name

Unknown

Attorney Docket Number

AMAT/5191.C1/ISM/CORE/MCVD/PJS

Submission Date

June 8, 2004

**U.S. PATENT DOCUMENTS**

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		Number-Kind Code <sup>2</sup> (if known)					
Q	A91	US-6578287 B2	06/17/2003	ASWAD			
	A92	US-6572705 B1	06/03/2003	SUNTOLA, ET AL			
	A93	US-6551406 B1	04/22/2003	KILPI			
	A94	US-6511539 B1	01/28/2003	RAAJMAKERS			
	A95	US-6482733	11/19/2002	RAAJMAKERS, ET AL			
	A96	US-6482262	11/19/2002	ELERS, ET AL			
	A97	US-6481945 B1	11/19/2002	HASPER, ET AL			
	A98	US-6478872 B1	11/12/2002	CHAE, ET AL			
	A99	US-6475910	11/05/2002	SNEH			
	A100	US-6475276	11/05/2002	ELERS, ET AL			
	A101	US-6468924	10/22/2002	LEE, ET AL			
	A102	US-6451695	09/17/2002	SNEH			
	A103	US-6451119	09/17/2002	SNEH, ET AL			
	A104	US-6447607 B2	09/10/2002	SOININEN, ET AL			
	A105	US-6416577	07/09/2002	SUNTOLOA, ET AL			
	A106	US-6399491	06/04/2002	JEON, ET AL			
	A107	US-6391785	05/21/2002	SATTA, ET AL			
JP	A108	US-6379748	04/30/2002	BHANDARI, ET AL			

**FOREIGN PATENT DOCUMENTS**

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		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
X	B26	WO 01/29280 A1	04/26/2001	ASM AMERICA, INC.		
JP	B27	WO 01/29891 A1	04/26/2001	ASM AMERICA, INC.		
JP	B28	WO 01/29893 A1	04/26/2001	ASM AMERICA, INC.		
JP	B29	WO 01/36702 A1	05/25/2001	GENITECH CO., LTD.		
JP	B30	WO 01/66832 A2	09/13/2001	ASM AMERICA, INC.		

Examiner

J. R.

Date Considered

6/24/05

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# **SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

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Sheet

7

of

11

Application Number

10/792,323

Filing Date

March 3, 2004

First Named Inventor

Lawrence C. Lei

Group Art Unit

Unknown

Examiner Name

Unknown

Attorney Docket Number

AMAT/5191.C1/ISM/CORE/MCVD/PJS

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JP	A109	US-6372598	04/16/2002	KANG, ET AL.	
	A110	US-6358829	03/19/2002	YOON, ET AL.	
	A111	US-6348376	02/19/2002	LIM, ET AL.	
	A112	US-6342277	01/29/2002	SHERMAN	
	A113	US-6306216 B1	10/23/2001	KIM, ET AL.	
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JP	B31	WO 02/08485 A2	01/31/2002	ASM INTERNATIONAL N.V.		
JP	B32	WO 02/08488 A1	01/31/2002	ASM MICROCHEMISTRY OY		
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JP	B34	WO 02/45167 A2	06/06/2002	ASM MICROCHEMISTRY OY		
JP	B35	WO 02/45871 A1	06/13/2002	ANGSTRON SYSTEMS, INC.		

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S-R

Date Considered

6/10/04

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**SUPPLEMENTAL INFORMATION  
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Sheet

8

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11

Application Number

10/792,323

Filing Date

March 3, 2004

First Named Inventor

Lawrence C. Lei

Group Art Unit

Unknown

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SL	A127	US-6162488	12/19/2000	GEVELBER, ET AL.	
	A128	US-6144060	11/07/2000	PARK, ET AL.	
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	A133	US-6124158	09/26/2000	DAUTARTAS, ET AL.	
	A134	US-6084302	07/04/2000	SANDHU	
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	A141	US-5942089	08/24/1999	SPROUL, ET AL.	
	A142	US-5923056	07/13/1999	LEE, ET AL.	
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	A144	US-5879459	03/09/1999	GADGIL, ET AL.	
SL	A145	US-5855680	01/05/1999	SOININEN, ET AL.	

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		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
YB	B36	WO 96/17107	06/06/1996	MIKROKEMIA OY		
SL	B37	WO 99/01595	01/14/1999	NESTE OY		
YB	B38	WO 99/29924	06/17/1999	NESTE OYJ		
YB	B39	WO 99/65064	12/16/1999	A.S.M. INTERNATIONAL N.V.		

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Date Considered

6/12/04

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Sheet 9

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11

Application Number

10/792,323

Filing Date

March 3, 2004

First Named Inventor

Lawrence C. Lei

Group Art Unit

Unknown

Examiner Name

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Attorney Docket Number

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SR	A146	US-5835677	11/10/1998	LI, ET AL.	
	A147	US-5820678	10/13/1998	HUBERT, ET AL.	
	A148	US-5807792	09/15/1998	ILG, ET AL.	
	A149	US-5796116	08/18/1998	NAKATTA, ET AL.	
	A150	US-5764849	06/09/1998	ATWELL	
	A151	US-5730802	03/24/1998	ISHIZUMI, ET AL.	
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	A162	US-5480818	01/02/1996	MATSUMOTO, ET AL.	
	A163	US-5447569	09/05/1995	HISKES, ET AL.	
	A164	US-5443647	08/22/1995	AUCOIN, ET AL.	
	A165	US-5441703	08/15/1995	JURGENSEN	
	A166	US-5377429	01/03/1995	SANDHU, ET AL.	
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	A168	US-5354516	10/11/1994	TOMITA	
	A169	US-5338362	08/16/1994	IMAHASHI	
	A170	US-5294286	03/15/1994	NISHIZAWA, ET AL.	
	A171	US-5281274	01/25/1994	YODER	
	A172	US-5261959	11/16/1993	GASWORTH	
hp	A173	US-5225366	07/06/1993	YODER	

Examiner

S. R.

Date Considered

6/26/05

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Sheet 10 of 11

Application Number	10/792,323
Filing Date	March 3, 2004
First Named Inventor	Lawrence C. Lei
Group Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket Number	AMAT/5191.C1/ISM/CORE/MCVD/PJS
Submission Date	June 8, 2004

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JD	A174	US-5098741	03/24/1992	NOLET, ET AL.	
	A175	US-4993357	02/19/1991	SCHOLZ	
	A176	US-4975252	12/04/1990	NISHIZAWA, ET AL.	
	A177	US-4911101	03/27/1990	BAL.LINGALL III, ET AL.	
	A178	US-4834831	05/30/1989	NISHIZAWA, ET AL.	
	A179	US-4783343	11/08/1988	SATO	
	A180	US-4717596	01/05/1988	BARBEE, ET AL.	
	A181	US-4413022	11/01/1983	SUNTOLA, ET AL.	
	A182	US-4389973	06/28/1983	SUNTOLA, ET AL.	
	A183	US-4369031	01/18/1983	GOLDMAN, ET AL.	
	A184	US-4276243	06/30/1981	PARTUS	

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	B46					
	B47					
	B48					
	B49					
	B50					

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6/21/05

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Substitute for form 1449B/PTO  <b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)		Application Number	10/792,323		
		Filing Date	March 3, 2004		
		First Named Inventor	Lawrence C. Lei		
		Group Art Unit	Unknown		
		Examiner Name	Unknown		
		Attorney Docket Number	AMAT/5191.C1/ISM/CORE/MCVD/PJS		
Sheet	11	of	11	Submission Date	June 8, 2004

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
sf	C1	Kukli, <i>et al.</i> , "Tailoring the Dielectric Properties of HfO <sub>2</sub> -Ta <sub>2</sub> O <sub>5</sub> Nanolaminates," Applied Physics Letters, Vol. 68, No. 26, June 24, 1996; p. 3737-9	
sf	C2	Kukli, <i>et al.</i> "Atomic Layer Epitaxy Growth of Tantalum Oxide Thin Films from Ta(OC <sub>2</sub> H <sub>5</sub> ) <sub>5</sub> and H <sub>2</sub> O," Journal of the Electrochemical Society, Vol. 142, No. 5, May 1995; p. 1670-5	
sf	C3	Kukli, <i>et al.</i> , "In situ Study of Atomic Layer Epitaxy Growth of Tantalum Oxide Thin Films From Ta(OC <sub>2</sub> H <sub>5</sub> ) <sub>5</sub> and H <sub>2</sub> O," Applied Surface Science, Vol. 112, March 1997, p. 236-42	
sf	C4	Kukli, <i>et al.</i> , "Properties of Ta <sub>2</sub> O <sub>5</sub> -Based Dielectric Nanolaminates Deposited by Atomic Layer Epitaxy," Journal of the Electrochemical Society, Vol. 144, No. 1, Jan. 1997; p. 300-6	
sf	C5	Kukli, <i>et al.</i> , "Properties of (Nb <sub>1-x</sub> Ta <sub>x</sub> ) <sub>2</sub> O <sub>5</sub> Solid Solutions and (Nb <sub>1-x</sub> Ta <sub>x</sub> ) <sub>2</sub> O <sub>5</sub> -ZrO <sub>2</sub> Nanolaminates Grown by Atomic Layer Epitaxy," 1997; p. 785-93.	
sf	C6	Ritala, M., <i>et al.</i> , "Chemical Vapor Deposition," January 1999, p. 6-9	
sf	C7	Rosnagel, <i>et al.</i> "Plasma-enhanced Atomic Layer Deposition of Ta and Ti for Interconnect Diffusion Barriers," J. Vac. Sci. Technol. B., Vol. 18, No. 4 (July 2000); p2016-20	
sf	C8	Niinisto, <i>et al.</i> "Synthesis of Oxide Thin Films and Overlayers by Atomic Layer Epitaxy for Advanced Applications," Materials Science and Engineering B41 (1996) 23-29	
sf	C9	Eisenbraun, <i>et al.</i> "Atomic Layer Deposition (ALD) of Tantalum-based materials for zero thickness copper barrier applications," Proceedings of the IEEE 2001 International Interconnect Technology Conference (Cat. No. 01EX461) 2001	

Examiner	S. R.	Date Considered	6/10/04
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

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